

What is claimed is:

1. An embolism protection device comprising a plurality of fibers having surface capillaries, wherein the fibers are bound within a structure and have a deployed  
5 configuration that fills the lumen of a vessel having a diameter corresponding to that of a human vessel.
2. The embolism protection device of claim 1 wherein fibers comprise a hydrophilic polymer.
- 10 3. The embolism protection device of claim 1 wherein the fibers comprise polyester.
4. The embolism protection device of claim 1 wherein the fibers comprise a bioresorbable polymer.
- 15 5. The embolism protection device of claim 1 wherein the fibers are within a fabric.
6. The embolism protection device of claim 1 wherein the fibers are curled.
- 20 7. The embolism protection device of claim 1 wherein the fibers have a curled configuration at body temperature.
8. The embolism protection device of claim 1 wherein the fibers are in a bundle.

9. The embolism protection device of claim 1 wherein the fibers are grafted with a second polymer.

10. The embolism protection device of claim 9 wherein the second polymer is a hydrogel.

11. The embolism protection device of claim 1 wherein the structure within the vessel has an effective pore size to trap a majority of emboli with a diameter larger than 0.2 mm while a majority of particulates with a diameter smaller than 0.001 mm pass.

12. The embolism protection device of claim 1 further comprising a biocompatible adhesive.

13. The embolism protection device of claim 1 further comprising a tether.

14. A method for trapping emboli, the method comprising placing an embolism protection device of claim 1 within a patient's vessel.

15. A system for trapping emboli comprising a delivery tool comprising a tether and an embolism protection device attached to the tether and wherein the embolism protection device comprises a fiber with surface capillaries with a size suitable for placement within a human vessel.

16. The system of claim 15 wherein the tether is a guidewire.

17. The system of claim 15 wherein the delivery tool comprises a cannula through which the embolism protection device can be delivered.

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18. The system of claim 15 wherein the fibers comprise a polyester.

19. The system of claim 15 wherein the embolism protection device is attached to the tether with an adhesive.

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20. A method for trapping emboli, the method comprising placing a fiber within a patient's vessel wherein the fibers have surface capillaries.

21. The method of claim 20 wherein a plurality of fibers with surface capillaries are placed within the patient's vessel.

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22. The method of claim 21 wherein the plurality of fibers are in a bundle.

23. The method of claim 20 wherein the placing of the fiber is performed with a delivery tool that associates with the fiber.

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24. The method of claim 23 wherein the delivery tool holds the fiber in a configuration for passage through a sheath for deployment of the fiber within a vessel.

25. The method of claim 24 wherein a plurality of fibers are deployed and the plurality of fibers fill the lumen of the vessel with an effective pore size to trap a selected range of emboli.

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26. The method of claim 25 wherein the delivery tool comprises a guidewire.

27. The method of claim 20 wherein the fiber is curled at body temperature.

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